LOUISIANA TECHNOLOGY INNOVATIONS FUND – FINAL REPORT
April 27, 2001

I. DEPARTMENT/AGENCY

Academic Computing Section, LSU Medical Center-Shreveport

II. PROJECT TITLE

Internet-based Videoconferencing for Education, Administration, and Healthcare

III. PROJECT LEADER

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IV. DESCRIPTION OF THE PROJECT

The specific aims of the project are: (1) provide gateway technology between the present and the new, internet-based videoconferencing system; (2) build a demonstration testbed for the new, Internet-based videoconferencing technology; (3) migrate the best components of the testbed to a production level system that will be used by the project partners; and (4) produce a report that will be a blueprint that can be replicated efficiently and economically by other education and state agencies.

V. POST IMPLEMENTATION REVIEW AND ASSESSMENT

a. Executive Summary of Findings

The grant had four specific objectives, all of which were met. Concerning objective (1), it was determined that there is good, reliable equipment on the market today to provide gateway functionality between the present and new videoconferencing systems. When providing gateway functionality, it was determined that there are two viable methods of providing it. The first is by using a Multipoint Control Unit (MCU) that supports transcoding and thereby

is able to mix different videoconferencing systems together in a conference. The other method is to use a traditional gateway that allows point-to-point connections between different videoconferencing systems. Both methods work well in providing gateway services however; using an MCU also provides MCU functionality as well.

During the implementation of objective (2), it was determined that Internet-based videoconferencing systems worked well under specific network conditions. It was determined that this new mode of videoconferencing is highly dependent on the performance of the underlying data network. A congested network equated to poor videoconferencing performance while a network with no congestion equated to good videoconferencing performance. It also demonstrated that this mode of videoconferencing could generate large amounts of data traffic and thereby adversely affect networks.

The implementation of Objective (3) as with Objective (2) demonstrated that the performance of the underlying network greatly impacts the performance of this new mode of videoconferencing. It also demonstrated that the tools available to manage Internet-based videoconferencing systems are clearly in the beginning stage of development. Although the tools are adequate in a small-scale deployment of the technology, the tools make large-scale deployment cumbersome. This is understandable since the technology is fairly new. It is expected that as this technology matures; these tools will become more suited toward supporting large deployments. The technology is maturing quickly so it is expected that this issue will be addressed soon.

Objective (4) was developed using information gathered during the design, implementation, and operation associated with meeting the first three objectives. The document developed provides the reader with information on how to properly implement this new mode of videoconferencing as well as the network issues associated with doing so.

b. Accomplishments and Best Practices Identified

With the successful implementation of Objective (1), there is now a means of bridging the current and new Internet-based videoconferencing systems together. This feature will provide a smooth migration path between the different videoconferencing systems as opposed to a forklift replacement of current equipment for new.

The implementation and operation of both a testbed and production Internet-based videoconferencing network provided great insight into the structure of a network needed to support such an application. Because of the nature of this mode of videoconferencing, it requires an underlying data network that is not congested and one that is not adversely affected by constant data streams. Implementing this technology on a congested network can adversely affect not

only videoconferencing performance but also the performance of other data applications traversing the network.

The creation of a document developed from information acquired by implementing Objectives 1-3 is an accomplishment that will assist other agencies in the deployment of this new mode of videoconferencing.

c. Benefits Achieved/Expected

With the implementation of all four objectives, the grant participants have gained valuable experience concerning internet based videoconferencing systems on the market today as well as the issues involved in deploying this technology on an agency's data network. With this knowledge, the grant participants are all in a better position to assist other agencies in the decision of whether to utilize this technology for an application or not.

d. Pitfalls Encountered

There were two major pitfalls encountered while meeting the objectives outlined in this grant. The first concerned the effect of the underlying data network on this technology. Much work was done to develop a data network that could support this new technology as well as not adversely affect other data applications such as email, web browsing, etc. The second pitfall encountered was the quick pace at which the technology is evolving. New products with new features are being introduced all the time. This quick evolution requires personnel to stay vigilant when it comes to keeping current regarding this technology.

e. Recommendations to Agencies Planning to use this Technology

Before implementing this technology, it is highly recommended that an agency read the document generated by this grant. The document includes information concerning the technology itself as well as addresses network issues involved with deploying it on a data network. Reading this document should provide the reader with a good foundation on which to base decisions concerning this technology on.

VI. FINAL COST VS. BUDGET

(To be provided by authorized University Fiscal Agent.)

VII. ITEMIZED LIST OF PROJECT EXPENSES
(To be provided by authorized University Fiscal Agent.)